

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

1.9
R53F

NEWS LETTER TO THE FIELD MEN.

March 1, 1915.

DIVISION OF CONSTRUCTION.
V. M. Peirce, Chief.

Projects:

Field Experiments.

The contract for the construction of the Mount Vernon Avenue experimental road in Alexandria County, Va., was awarded to the William P. McDonald Construction Company of New York City. The work of excavation will begin at once. The surfacing is to begin not later than May 1. L. I. Hewes, S.H.E., in charge. Assisted by H. K. Craig, H.E., and A. C. Dunn, C.E.S., also, temporarily, R. E. Royall, J.H.E.

A survey is being made on the Russell Road in Alexandria County, preliminary to the preparation of an estimate of the cost of its improvement as an extension of the experimental road above mentioned. A. C. Dunn, L. S. Hall, A. L. Hooper, and E. R. Lyons, civil engineer students, are carrying on this work under the general direction of L. I. Hewes.

Preparation of Specifications.

The preparation of the standard instructions for making plans, etc., mentioned in the news letter for February 1, has been delayed but they will be ready for use of the field men within a short time.

Object-Lesson Roads.

The object-lesson roads at Elkton, Ky. (W. E. Brooks, S.H.E., in charge), and Burlington, N. C. (Mack Galbreath, J.H.E., in charge) are still under construction. Those at Brunswick, Ga., and Talihina, Okla., have been completed. In addition to these, an object-lesson road involving gravel construction was built at Aiken, S. C., under the direction of W. J. R. Weir, H.E., who is in charge of the post road near Aiken.

Object-lesson roads are also under way at the following places: Woodward, Okla., earth and sand-clay. James C. Wonders, S.H.E., in charge.

Ocala, Fla., sand-clay. H. P. Worrell, H.E., in charge. Greenwood, Miss., gravel construction. H. H. Lotter, who is in charge of the Mississippi post road, is superintending this work.

County Model System.

The work on the county model system in Calcasieu Parish, La., under the direction of this Office is completed. Cost data relating to the work will appear in the bulletin on the construction work of this Office covering the period July, 1913, to January 1, 1915, which will be issued shortly. A county system

study is being made in Alachua County, Fla., by E. O. Hathaway, S.H.E., Gainesville, Fla. The plans for a complete county system, prepared by the engineer of St. Mary Parish, La., were reviewed and approved by C. H. Sweetser, S.H.E.

Inspection and Advice.

The following inspection and advice assignments have been completed during the month:

Boerne, Texas, involving the expenditure of a \$25,000 bond issue, R. E. Toms; Paris, Tenn., J. A. Whittaker; Falfurrias, Brooks County, Texas, R. E. Toms. This latter involved a scheme of drainage for the city of Falfurrias and the county, as well as advice in regard to road construction. C. H. Sweetser is at present advising with the Police Jury at Plaquemine, La., in regard to a project involving bond issue. He will then go to Alexandria, La., to take charge of a gravel object-lesson road.

Inspection of Object-Lesson Roads.

The following object-lesson roads, built some time ago, have been inspected and arrangements for their maintenance perfected:

West Palm Beach, Fla., bituminous construction, C. S. Reeve, Chemist.

Gay Head, Martha's Vineyard, Mass., sand-clay construction, W. L. Spoon, S.H.E.

County Superintendence of Roads.

In addition to the work which they are doing on their respective post roads, the following engineers are advising with county authorities in regard to the improvement of general road conditions in the counties in which they are engaged:

J. D. Fauntleroy, Fairfax County, Va., and L. L. Winans, Travis County, Texas.

Bridge Work. O. L. Grover, Bridge Engineer, in charge. Mr. Grover and his assistants are still busy on the preparation of specifications for bridges, and on the department bulletin on culverts and bridges.

Instruction of Students.

The civil engineer students have been given a series of talks on practical highway engineering work. They have also been given a few bridge studies by Mr. Grover.

Improvement of Post Roads.

Little work has been done during the months of January and February on account of weather conditions.

P. St. J. Wilson, Assistant Director, inspected the Texas, Mississippi, and Loudon County, Tenn., projects during the latter part of January.

The bids for the Texas post road, from Austin to San Antonio, were satisfactory for all counties, excepting Pexar. In that county all the bids were rejected because they were too high, and it was decided to do the work by force account. Percy Rideout, J.H.E.,

was transferred from Greenwood, Miss., to San Antonio, Texas, to assist on construction.

Virginia post road. The post road work in Spotsylvania, Hanover, and Caroline counties will be completed this month.

Iowa, Dubuque County. Bids for constructing this post road will be received the latter part of March.

The assignment of engineers on the other post roads remains as given in the February news letter.

A list of the contract prices of all projects which have been let on a unit price basis has been prepared. Owing to lack of space they can not all appear in this letter, but will be given from time to time as space allows. The prices for five of the projects follow on the next few pages:

MAINE POST ROAD.

Contract Prices.

Richmond F. Hudson, Contractor. May 13, 1914.

Excavation, Earth (including clearing and grubbing)...	\$.60	per cu. yd.
" Rock.....	2.00	" " "
" Porrow.....	.60	" " "
Stone for "V" drain.....	1.25	" " "
Gravel do.....	1.25	" " "
Stone base measured in place after rolling.	1.25	" " "
Concrete: Class A - 1:2:4	12.00	" " "
Class B - 1:2½:5	11.00	" " "
Class C - 1:3:6	10.00	" " "
Stone masonry.....	5.00	" " "
Corrugated metal pipe (Laying)		
12".....	\$.30	per lin. ft.
16".....	.40	" " "
18".....	.50	" " "
24".....	1.00	" " "
Side drains.....	1.00	" " "
Guard rail (wood).....	.30	" " "
Macadam surface (6").....	.55	" sq. yd.
Applying bituminous material penetration method.....	.04	per gal.
Gravel base in place after rolling.....	1.25	per cu. yd.
Cobble gutter.....	1.00	per sq. yd.

Bituminous material (oil asphalt)		
In tank cars.....	5.65	cts. per gal.
In barrels.....	7.95	" " "

MARYLAND POST ROAD.

Contract Prices.

October 31, 1913. The Warren E. Brenizer
Company, Washington, D. C., Contractors.

^x Excavation, Earth.....	\$.45	per cu. yd.
Rock.....	2.00	" " "
Vitrified clay pipe, 12" .....	.55	per lin. ft.
15" .....	.80	" " "
18"	1.10	" " "
24"	1.60	" " "
Corrugated metal pipe,		
12"	1.00	" " "
15"	1.50	" " "
18"	1.65	" " "
24"	2.00	" " "
Concrete headwalls.....	8.00	per cu. yd.
" box culverts.....	8.00	" " "
Reinforcing steel.....	.03½	per lb.
^x Stone in place:		
No. 1 Native Stone.....	1.65	per ton.
No. 2 Limestone.....	2.65	" "
No. 3 Limestone.....	2.55	" "

^xNo overhaul allowed.

MISSISSIPPI POST ROAD.

Contract Prices.

April 4, 1914.

Excavation.....	\$.22 $\frac{1}{2}$ per cu. yd.
Borrow.....	.22 $\frac{1}{2}$ " " "

Cast Iron culverts (Southern Mfg. Co. type)

12"	1.30 per foot
15"	1.55 " "
18"	1.80 " "
24"	2.35 " "

Vitrified clay culverts

12" .....	.42 " "
15" .....	.61 " "
18" .....	.81 " "
24"	1.31 " "

Concrete in headwalls.....	10.00 per cu. yd.
" (reinforced, including steel)...	12.50 " " "

Gravel surface (Tishmingo gravel)

8" thick compacted.....	.66 $\frac{1}{2}$ per sq. yd.
-------------------------	-------------------------------

Bridges: Pelucia.....	\$2895	} W. T. Young Bridge Co.
Lake Creek.....	2645	
Lake Henry.....	3690	
50'	1790	
2 - 25'	913	
		Contractor:

NORTH CAROLINA POST ROAD.

Old Fort Township.

Unit prices bid.

J. R. Gibson, 903 E. Main Avenue, Knoxville,
Tennessee, Contractor.

Excavation:

Earth.....	\$.22	per cu. yd.
Rock.....	.77	" " "

Gravel in place.....	.30	" " "
----------------------	-----	-------

Corrugated pipe, in place:

10" .....	.65	per lin. ft.
12" .....	.75	" " "
15" .....	.88	" " "
18"	1.00	" " "
24"	1.55	" " "

Concrete.....	9.00	per cu. yd. in place.
---------------	------	--------------------------

Steel channels, etc.....	.08	per lb.
--------------------------	-----	---------

SOUTH CAROLINA POST ROAD.

East Section.

Dyches and Holly, Aiken, S. C., Contractors.

CONTRACT PRICES.

January 12, 1915.

Excavation, Earth.....	\$.12½ per cu. yd.
Pit clay, in place.....	.33 " " "
Clay overhaul.....	.002½ per cy. sta.
Stripping clay pit.....	.10½ per cu. yd.

Vitrified clay pipe:

12" .....	.30 per lin. ft.
15" .....	.42 " " "
18" .....	.63 " " "
24"	1.07 " " "
30"	3.75 " " "

Corrugated metal pipe: Laying (1)

12" .....	.12 " " "
15" .....	.13 " " "
18" .....	.15 " " "
24" .....	.20 " " "
30" .....	.30 " " "

Masonry..... 12.00 per cu. yd.

Force Account:

Foreman.....	.40 per hour
Labor.....	.12½ " "
Teams.....	.40 " "

(1) Pipe furnished by county.

DIVISION OF ROAD MAINTENANCE.
E. W. James, Chief.

Projects:

Washington-Atlanta Highway.

Lee County, N. C., has voted a bond issue of \$100,000 to complete its system of roads, which will include a section of the Washington-Atlanta Highway. This new work will probably be added to the Central Section, now in charge of W. L. Spoon, S.H.E., Pinehurst, N. C.

Banner Township, Johnston County, N. C., is planning to spend \$50,000, proceeds of a bond issue, on its roads. V. E. Towles, H.E., Benson, N. C., is making a survey for the construction of that section of the Washington-Atlanta Highway which will form a part of the system.

Maintenance Cost Data on Experimental Roads.

A complete report of maintenance costs and traffic on the Rockville Pike, Montgomery County, Md. (1913 experimental road), has been prepared in cooperation with the Chemistry Division, and will appear in a March issue of the Engineering Record. A brief statement of these costs as well as cost data relating to the 1912 experimental road will appear in the Annual Progress Report. A comparison between the costs of road supervision using automobiles and using livery has been made. The automobile figures are based on the costs of operating three cars in supervising the maintenance of the Washington-Atlanta highway. The livery costs were taken directly from four post road project accounts. The results will shortly appear in the Engineering News.

DIVISION OF NATIONAL PARK AND FOREST ROADS.
T. W. Allen, Chief.

Projects:

National Forest Roads.

Conditions in Districts 2, 3, 4, and 6 remain about as stated in the February letter. The engineers in charge have been detailed to series of lectures in near-by agricultural colleges, etc., but will resume field work as the weather allows.

In District 5, headquarters San Francisco, Cal., C. C. Morris, H.E., who is in charge, will begin a survey of the Trinity River Road this month.

National Park Roads.

Field work is still closed because of winter weather. Mr. Finch has completed the plans for Section 1 of the Ranger-North Park Line Road in Sequoia Park.

DIVISION OF PHYSICAL TESTS.
E. B. McCormick, Mechanical Engineer.

Projects:

Instruction of Students.

The civil engineer students have been given a series of short talks by E. B. Smith, Associate Mechanical Engineer, on the proper interpretation of the results of tests.



Concrete Investigations.

Some of the preliminary tests have been made on the concrete which has been buried in the contents of a silo at the Beltsville, Md., Dairy Farm. These concrete specimens were of different mixtures and different surface treatment. The object of the tests is to secure a concrete mixture or treatment which will be unaffected by the silage juice.

Investigations are still under way to determine the law of "flow" of concrete subjected to continuous loads.

The effect of different amounts of clay in mixing water on the strength of concrete, is being determined.

Investigations have been started to determine the distribution of earth pressures on retaining walls, and the distribution of loads, through fills and mats, onto bridge floors.

Physical Testing of Road Building Materials.

Standardization work has been started to develop a method of determining the resistance to wear of gravels, in order to decide on their suitability for use in road construction.

Traction Tests.

Traction dynamometer tests have been run on the finished Rockville road. The preliminary runs on the Mount Vernon Avenue experimental road have also been made, using different widths of tires. The men engaged in the traction work will soon be moved to their new quarters at the Arlington Farm, where they will be located when work on this project is being done.

DIVISION OF CHEMISTRY.

C. S. Reeve, Chemist.

Projects:

Experimental Bituminous Road Construction and Maintenance.

Mr. Reeve has completed an inspection of the 1913-14 experiments at Miami, Lemon City, and West Palm Beach, Fla., and his report will appear in the next Annual Progress Report. It may be confidently asserted, however, that durable, high-class construction is attainable through the use of coralline rock with a bituminous material.

Mr. Reeve superintended the construction of a short section of bituminous-sand road, over a coralline rock base. This was a continuation of the previous experiments at West Palm Beach. Two local sands were used: one from the road-side and the other from a half-mile away. These were mixed in proportions to yield a satisfactory graded mixture. The sand was heated on flat galvanized-iron plates and then mixed with hot fluxed Bermudez asphalt (50 penetration) at the rate of 11 gallons of bituminous material to 10 cubic feet of mixed sand. The mixture was spread to a loose depth of $2\frac{1}{2}$ inches and thoroughly compressed by rolling. The impracticability of carrying out work of this nature on a large scale by such crude methods was demonstrated.

Plans for a series of experiments in bituminous treatment of gravel at Las Cruces, N. M., are under way.

DIVISION OF ROAD ECONOMICS.
J. E. Pennybacker, Chief.

Projects:

General Statistical and Research Investigations.

Statistical forms have been prepared and sent to all of the State highway departments for the purpose of collecting exhaustive data for the year 1914 on road mileage, character and amount of road improvements, amounts of road revenues and expenditures. Such an investigation has been made at 5-year intervals, and has been published for the year 1904, and for 1909.

Road Management, Convict Labor Studies.

This field investigation of the use of convict labor in road construction and preparation of road materials, is nearing completion except for a few scattered points to be visited late in the spring. H. S. Fairbank, H.E., and W. F. Draper, P.A.S. of the U. S. Public Health Service, are still working on this assignment. They have completed their studies in Florida and South Carolina, and have about completed studies in North Carolina. The preparation of an exhaustive bulletin on the subject will be actively taken up within the next few weeks.

Economic Studies in Road Management.

In the study of State highway departments, their organization, methods of administration, construction and maintenance, and the economic aspects of their work, E. H. Barber, H.E., has been, during the past month, engaged in the States of New York and Massachusetts. The first draft of the New York report is about completed. It is hoped that each highway department will be similarly studied and that one or more publications will be issued as a result. In the study of systems of local road work, R. E. Eastham, H.E., has been working on studies of counties in Florida and Georgia. He has completed the study of Hillsboro and Marion Counties, Fla., Chatham and Ware Counties, Ga., and is now studying the Fulton County, Ga., system. J. J. Tobin, A.R.E., has completed a study of Bexar and McLennan Counties, Texas, and made some preliminary studies in Louisiana parishes. These studies cover administration, finance, construction, and maintenance, and are intended to bring out all elements of strength and weakness in systems of local management, so that helpful reports and bulletins may be issued.

Post Road Studies.

One economic study has now been made on each of the seventeen post roads, and second studies have been made on two. The Texas post road on which the study has been completed is the longest in the United States. Further studies will be made on the post roads as traffic conditions warrant. J. J. Tobin, A.R.E., has been carrying on some of this work.

Lectures and Demonstrations of Road and Bridge Models.

L. E. Boykin, A.R.E., will give lectures on road economics in West Virginia, and Indiana, this month.
A. E. Palen, H.E., will lecture on March 15, 16, 17, on highway engineering at the State Agricultural College, Manhattan, Kansas.
O. N. Powell, H.E., will lecture on March 24, 25, 26, on highway engineering at the State Agricultural College of New Mexico.
C. H. Kendall, S.H.E., will lecture on March 4, 5, 6, on highway engineering at the State Agricultural College, Logan, Utah.
J. T. Schuyler, S.H.E., lectured on highway work before a road convention at Pullman, Wash.
C. S. Reeve lecture in Richmond, Va., and at the University of Vermont, on the uses of bituminous materials in road work.
R. F. Eastham will assist in a \$200,000 bond issue campaign at Union, S. C.

The exhibit of the Office at the Panama-Pacific Exposition has been installed and is under the immediate control of M. O. Eldridge, A.R.E. An educational tour with the road models was conducted in Illinois during the past month by the New York Central Lines. B. H. Burrell, S.H.E., and J. J. Tobin, A. R. E., accompanied this train. It is planned that the Office will equip and assist in the operation of a Good Roads Train through Florida, using the "auditorium" car of the Southern Railway, a "model" car fitted with the models and bromides, and a "living" car providing accommodations for the demonstrators. L. E. Boykin and J. J. Tobin will represent the Office. The proposition is for each railroad to provide transportation for the Good Roads Train over its line. The plan is to make between 30 and 40 stops, including a 2-days' stop at St. Petersburg, Fla., during the Annual Convention of the Florida State Good Roads Association. The route will probably end at Tallahassee about April 15, to give the members of the legislature an opportunity to study the exhibit. Exhibits are to be made shortly at Grand Rapids, Mich., Norwalk, Conn., and other points.

Library.

The Office will be represented in the new Yearbook of the Department by an article by J. E. Pennybacker on State Management of Public Roads. A revision of our descriptive catalogue of road models is now in press. Revisions of several other bulletins are nearing completion, and the manuscript of a new bulletin on Portland Cement Concrete for Country Highways is about ready to go to the printer.

DIVISION OF ACCOUNTS.

W. C. Wyatt, in charge.

A communication from the Chairman of the Advisory Committee on Finance and Business Methods, states:

"(1) It is the opinion of the Committee that the usual laundry slips furnished by laundries and unreceipted will continue to be accepted by the Treasury Department as evidence of payment of laundry charges, the same as formerly

"(2) Where laundry receipts are not secured to support charges for laundry, a statement to the effect that it was impracticable to secure receipts, will not be considered sufficient to pass such charges. There should be something additional in the statement to indicate why it was impracticable to obtain a receipt, such as laundry was done by Chinaman who could not write, or no receipt was furnished with laundry and there was not sufficient time to obtain a receipt, etc."

Another communication, dated February 18, 1915, addressed to the officer in charge of records, Bureau of Plant Industry, by the Chairman of the Advisory Committee on Finance and Business Methods, reads as follows:

"I have your letter of February 16, addressed to Mr. Ashley and by him referred to the Advisory Committee on Finance and Business Methods, with which you inclose copies of two telegrams reserving hotel accommodations from an employee of your Bureau stationed at Blissfield, Michigan. The first telegram is dated Blissfield, Michigan, January 19, 1915, on which date the employee was not in a travel status because he did not leave his official station until 6:45 A.M. on January 20. The second telegram is dated Blissfield, Michigan, January 26, and was sent before 8:30 A.M. on that date, when he took the train. After full consideration the Committee has authorized me to make answer to your questions as follows:

(1) Question: To which day's subsistence expense should the telegram of January 19 be charged?

Answer: The Comptroller holds that telegrams reserving hotel accommodations are to be regarded as a part of the subsistence expense. Subsistence expenses can be reimbursed only for days on which an employee is in a travel status. As the employee in question was not in a travel status on January 19 he can not be reimbursed for any subsistence expense, including telegrams reserving hotel accommodations, incurred on that date. This telegram can not be charged to the subsistence expense of any date.

(2) Question: Inasmuch as telegrams reserving hotel accommodations are subsistence expenses, can the amounts (subject to Item 3) be allowed, the expense having been incurred at the employee's official station?

Answer: The cost of the telegram of January 19, reserving hotel accommodations, having been incurred on a date on which the employee was not in a travel status, can not be allowed. The cost of the second telegram, January 26, can be charged to the subsistence of that date, because the employee left his official station and was in a travel status the same day the telegram was sent. While it is true the expense was actually incurred at his official station, yet it was an incident to his travel on that date and is analogous to the purchase of transportation at his official station before taking the train to leave his station.

(3) Question: Should charges for telegraph messages reserving hotel accommodations be made at the rates shown in schedule of rates prescribed by the Postmaster General?

Answer: Yes. The subsistence of an employee while in a travel status is a Government expense and the Department should be entitled to the reduced rates for telegrams prescribed by the Postmaster General. Of course, this applies only to cases where the employee is reimbursed on an actual expense basis. Where the employee has a per diem allowance in lieu of subsistence the cost of such a telegram is a part of the per diem allowance and the Department is not interested in the amount or rate charged on the telegram. In Paragraph 45 of the Fiscal Regulations employees are prohibited from using identification cards for telegrams reserving hotel accommodations when they are receiving a per diem allowance while traveling."

The Comptroller rendered an opinion on October 5, 1914, notice of which has just been received at this Office, to the effect that expenses for laundry are not authorized to be prorated for the period covered by the bill rendered, but that the entire amount must be charged to the day upon which the bill is paid. For instance, if a bill of \$1.25 is paid on the sixteenth of the month, for laundry soiled during the previous week, the entire \$1.25 must be charged to the sixteenth and cannot be prorated over the period of travel as has been done heretofore. This is of importance to those employees who are on actual expense basis, and if the amount of the laundry bill, added to their other subsistence expense on the day upon which the bill is paid, makes their total subsistence for that day more than \$5.00, the excess will be disallowed. Attention should be called again to the necessity for stating the time of arrival and departure in expense accounts, in order that they may be promptly audited. It has been noticed recently that a number of the employees have omitted this information, which will make it necessary to correspond with them and delay the settlement of their accounts.

The Agricultural appropriation bill, which has just been passed by Congress, making appropriations for the fiscal year 1916, is of especial interest to this Office. The name of the Office is changed to that of Office of Public Roads and Rural Engineering, and the activities are extended to include, in addition to those already under way, farm irrigation investigations, farm drainage investigations, and rural engineering problems involving mechanical principles. This reorganization becomes effective on July 1, 1915.

The Division of Farm Irrigation includes utilization of water in farm irrigation, including best methods to apply in practice; different kinds of power and appliances; flow of water in ditches, pipes, and other conduits; etc. Farm Drainage includes drainage of swamp and other wet lands which may be made available for agricultural purposes; conducting field experiments and investigations concerning construction and maintenance of farm drainage work; developing equipment for construction and maintenance of farm drainage structures; etc. Rural engineering problems include the investigation of farm domestic water supply and drainage disposal, construction of farm buildings, and other rural problems involving mechanical principles.

Some idea of the work which has already been done by these Divisions, while connected with the Office of Experiment Stations, may be obtained by applying to the Division of Publications for bulletins issued by that Office with reference to drainage and irrigation, etc.

